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37

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,009	07/08/2003	Stanley T. Crooke	ISIS-5138	1016
32650	7590	10/24/2005	EXAMINER	
WOODCOCK WASHBURN LLP ONE LIBERTY PLACE - 46TH FLOOR PHILADELPHIA, PA 19103				WOLLENBERGER, LOUIS V
ART UNIT		PAPER NUMBER		
		1635		

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



# UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
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WASHINGTON, DC 20231  
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APPLICATION NO. 10/616,009	FILING DATE 7/8/2003	FIRST NAMED INVENTOR Crooke et al.	ATTORNEY DOCKET NO. ISIS-5138
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EXAMINER

Louis V. Wollenberger

ART UNIT

PAPER

1635

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.  
Commissioner of Patents

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR § 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR §§ 1.821 through 1.825 for the reason(s) set forth on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. (See attached RAW SEQUENCE LISTING ERROR REPORT)

APPLICANT IS GIVEN A ONE MONTH EXTENDABLE PERIOD WITHIN WHICH TO COMPLY WITH THE SEQUENCE RULES, 37 CFR §§ 1.821 - 1.825. Failure to comply with these requirements will result in ABANDONMENT of the application under 37 CFR §1.821(g). Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR § 1.136. In no case may an applicant extend the period for response beyond the six-month statutory period. Applicant is requested to return a copy of the attached Notice to comply with the response.

## HOW TO SEND SEQUENCES TO THE USPTO

Please direct all replies to the United States Patent and Trademark Office via one (1) of the following:  
(The addresses below are effective 5 June 2004.)

1. Electronically submitted through EFS-Bio  
(<http://www.uspto.gov/ebc/efs/downloads/documents.htm>), EFS Submission User Manual - ePAVE)
2. Mailed to:  
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401 Dulaney Street  
Alexandria, VA 22314

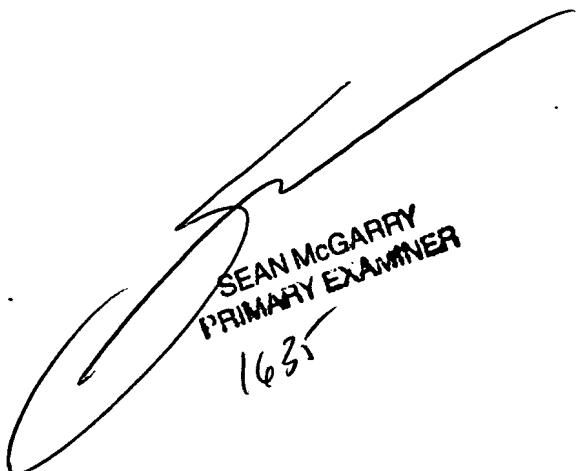
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Louis V. Wollenberger whose telephone number is 571-272-8144. The examiner can normally be reached on Mon-Fri, 8:00 am-4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Andrew Wang can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval system (PAIR). Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair>

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Louis V. Wollenberger, Ph.D.  
Examiner  
Art Unit 1635

October 3, 2005



SEAN McGARRY  
PRIMARY EXAMINER  
1635

**Notice to Comply**

10/616,009

Crockett et al.

Examiner  
Louis V. WollenbergerArt Unit  
1635**NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS  
CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE  
DISCLOSURES**

Applicant must file the items indicated below within the time period set in the Office action to which the Notice is attached to avoid abandonment under 35 U.S.C. § 133 (extensions of time may be obtained under the provisions of 37 CFR 1.136(a)).

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

- 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to the final rulemaking notice published at 55 FR 18230 (May 1, 1990), and 1114 OG 29 (May 15, 1990). If the effective filing date is on or after July 1, 1998, see the final rulemaking notice published at 63 FR 29620 (June 1, 1998) and 1211 OG 82 (June 23, 1998).
- 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).
- 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).
- 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."
- 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).
- 6. The paper copy of the "Sequence Listing" is not the same as the computer readable form of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
- 7. Other: See the attached RAW SEQUENCE LISTING ERROR REPORT (generated 9/2/05). The sequence listing submitted on Aug. 25, 2005, fails to comply for the reasons given therein.

**Applicant Must Provide:**

- An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".
- An initial or substitute paper copy of the "Sequence Listing", **as well as an amendment specifically directing its entry into the application.**
- A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (571) 272-2510

For CRF Submission Help, call (571) 272-2501/2583.

PatentIn Software Program Support

Technical Assistance.....703-287-0200

To Purchase PatentIn Software.....703-306-2600

**PLEASE RETURN A COPY OF THIS NOTICE WITH YOUR REPLY**

## STIC Biotechnology Systems Branch

### RAW SEQUENCE LISTING ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 10/616,009  
Source: 1Fu116  
Date Processed by STIC: 9/2/05

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT  
MARK SPENCER, TELEPHONE: 571-272-2510; FAX: 571-273-0221

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER  
VERSION 4.2.2 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND  
TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

<http://www.uspto.gov/web/offices/pac/checker/chkrnote.htm>

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail. Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom. Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>>), EFS Submission User Manual - ePAVE
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
3. Hand Carry, Federal Express, United Parcel Service, or other delivery service (EFFECTIVE 01/14/05): U.S. Patent and Trademark Office, Mail Stop Sequence, Customer Window, Randolph Building, 401 Dulany Street, Alexandria, VA 22314

Revised 01/24/05

## Raw Sequence Listing Error Summary

<u>ERROR DETECTED</u>	<u>SUGGESTED CORRECTION</u>	<u>SERIAL NUMBER:</u> <u>10/6/6,009</u>
<b>ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE</b>		
1 <input type="checkbox"/> Wrapped Nucleic Wrapped Aminos	The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor after creating it. Please adjust your right margin to .3; this will prevent "wrapping."	
2 <input type="checkbox"/> Invalid Line Length	The rules require that a line <b>not exceed</b> 72 characters in length. This includes white spaces.	
3 <input type="checkbox"/> Misaligned Amino Numbering	The numbering under each 5 <sup>th</sup> amino acid is misaligned. Do not use tab codes between numbers; use space characters, instead.	
4 <input type="checkbox"/> Non-ASCII	The submitted file was <b>not</b> saved in ASCII(DOS) text, as required by the Sequence Rules. <b>Please ensure your subsequent submission is saved in ASCII text.</b>	
5 <input type="checkbox"/> Variable Length	Sequence(s) <input type="checkbox"/> contain n's or Xaa's representing more than one residue. <b>Per Sequence Rules, each n or Xaa can only represent a single residue.</b> Please present the <b>maximum</b> number of each residue having variable length and indicate in the <220>-<223> section that some may be missing.	
6 <input type="checkbox"/> PatentIn 2.0 "bug"	A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequences(s) <input type="checkbox"/> . Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. <b>This applies to the mandatory &lt;220&gt;-&lt;223&gt; sections for Artificial or Unknown sequences.</b>	
7 <input type="checkbox"/> Skipped Sequences (OLD RULES)	Sequence(s) <input type="checkbox"/> missing. If intentional, please insert the following lines for <b>each</b> skipped sequence: (2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown) (i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading) (xi) SEQUENCE DESCRIPTION: SEQ ID NO:X: (insert SEQ ID NO where "X" is shown) This sequence is intentionally skipped	
	Please also adjust the "(ii) NUMBER OF SEQUENCES:" response to <b>include</b> the skipped sequences.	
8 <input type="checkbox"/> Skipped Sequences (NEW RULES)	Sequence(s) <input type="checkbox"/> missing. If <b>intentional</b> , please insert the following lines for <b>each</b> skipped sequence. <210> sequence id number <400> sequence id number 000	
9 <input type="checkbox"/> Use of n's or Xaa's (NEW RULES)	Use of n's and/or Xaa's have been detected in the Sequence Listing. Per 1.823 of Sequence Rules, use of <220>-<223> is <b>MANDATORY</b> if n's or Xaa's are present. In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.	
10 <input type="checkbox"/> Invalid <213> Response	Per 1.823 of Sequence Rules, the only <b>valid</b> <213> responses are: Unknown, Artificial Sequence, or scientific name (Genus/species). <b>&lt;220&gt;-&lt;223&gt; section is required when &lt;213&gt; response is Unknown or is Artificial Sequence</b>	
11 <input type="checkbox"/> Use of <220>	Sequence(s) <input type="checkbox"/> missing the <220> "Feature" and associated numeric identifiers and responses. Use of <220> to <223> is <b>MANDATORY</b> if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section. (See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of Sequence Rules)	
12 <input type="checkbox"/> PatentIn 2.0 "bug"	Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.	
13 <input type="checkbox"/> Misuse of n/Xaa	"n" can <b>only</b> represent a single <u>nucleotide</u> ; "Xaa" can <b>only</b> represent a single <u>amino acid</u>	



IFW16

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/616,009

DATE: 09/02/2005  
TIME: 14:08:22

Input Set : D:\ISIS-5138.ST25.txt  
Output Set: N:\CRF4\09022005\J616009.raw

*Does Not Comply  
with Corrected Diskette Neede*

*P.5*

3 <110> APPLICANT: Crooke, Stanley T.  
4 Lima, Walter F.  
5 Wu, Hongjiang  
7 <120> TITLE OF INVENTION: HUMAN RNASE H1 AND OLIGONUCLEOTIDE COMPOSITIONS THEREOF  
9 <130> FILE REFERENCE: ISIS-5138  
11 <140> CURRENT APPLICATION NUMBER: US 10/616,009  
12 <141> CURRENT FILING DATE: 2003-07-08  
14 <150> PRIOR APPLICATION NUMBER: US 09/409,926  
15 <151> PRIOR FILING DATE: 1999-09-30  
17 <160> NUMBER OF SEQ ID NOS: 72  
19 <170> SOFTWARE: PatentIn version 3.3  
21 <210> SEQ ID NO: 1  
22 <211> LENGTH: 286  
23 <212> TYPE: PRT  
24 <213> ORGANISM: Human  
26 <400> SEQUENCE: 1  
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33 20 25 30  
36 Arg Gly Arg Lys Thr Gly Val Phe Leu Thr Trp Asn Glu Cys Arg Ala  
37 35 40 45  
40 Gln Val Asp Arg Phe Pro Ala Ala Arg Phe Lys Lys Phe Ala Thr Glu  
41 50 55 60  
44 Asp Glu Ala Trp Ala Phe Val Arg Lys Ser Ala Ser Pro Glu Val Ser  
45 65 70 75 80  
48 Glu Gly His Glu Asn Gln His Gly Gln Glu Ser Glu Ala Lys Pro Gly  
49 85 90 95  
52 Lys Arg Leu Arg Glu Pro Leu Asp Gly Asp Gly His Glu Ser Ala Gln  
53 100 105 110  
56 Pro Tyr Ala Lys His Met Lys Pro Ser Val Glu Pro Ala Pro Pro Val  
57 115 120 125  
60 Ser Arg Asp Thr Phe Ser Tyr Met Gly Asp Phe Val Val Val Tyr Thr  
61 130 135 140  
64 Asp Gly Cys Cys Ser Ser Asn Gly Arg Arg Lys Pro Arg Ala Gly Ile  
65 145 150 155 160  
68 Gly Val Tyr Trp Gly Pro Gly His Pro Leu Asn Val Gly Ile Arg Leu  
69 165 170 175  
72 Pro Gly Arg Gln Thr Asn Gln Arg Ala Glu Ile His Ala Ala Cys Lys  
73 180 185 190  
76 Ala Ile Glu Gln Ala Lys Thr Gln Asn Ile Asn Lys Leu Val Leu Tyr  
77 195 200 205  
80 Thr Asp Ser Met Phe Thr Ile Asn Gly Ile Thr Asn Trp Val Gln Gly

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/616,009

DATE: 09/02/2005  
TIME: 14:08:22

Input Set : D:\ISIS-5138.ST25.txt  
Output Set: N:\CRF4\09022005\J616009.raw

81 210 215 220  
84 Trp Lys Lys Asn Gly Trp Lys Thr Ser Ala Gly Lys Glu Val Ile Asn  
85 225 230 235 240  
88 Lys Glu Asp Phe Val Ala Leu Glu Arg Leu Thr Gln Gly Met Asp Ile  
89 245 250 255  
92 Gln Trp Met His Val Pro Gly His Ser Gly Phe Ile Gly Asn Glu Glu  
93 260 265 270  
96 Ala Asp Arg Leu Ala Arg Glu Gly Ala Lys Gln Ser Glu Asp  
97 275 280 285  
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101 <211> LENGTH: 293  
102 <212> TYPE: PRT  
103 <213> ORGANISM: Chicken  
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111 Lys Gly Gly Gly Met Phe Tyr Ala Val Arg Lys Gly Arg Gln Thr Gly  
112 20 25 30  
115 Val Tyr Arg Thr Trp Ala Glu Cys Gln Gln Val Asn Arg Phe Pro  
116 35 40 45  
119 Ser Ala Ser Phe Lys Lys Phe Ala Thr Glu Lys Glu Ala Trp Ala Phe  
120 50 55 60  
123 Val Gly Ala Gly Pro Pro Asp Gly Gln Gln Ser Ala Pro Ala Glu Thr  
124 65 70 75 80  
127 His Gly Ala Ser Ala Val Ala Gln Glu Asn Ala Ser His Arg Glu Glu  
128 85 90 95  
131 Pro Glu Thr Asp Val Leu Cys Cys Asn Ala Cys Lys Arg Pro Tyr Glu  
132 100 105 110  
135 Gln Ser Thr Asn Glu Glu His Thr Val Arg Arg Ala Lys His Asp Glu  
136 115 120 125  
139 Glu Gln Ser Thr Pro Val Val Ser Glu Ala Lys Phe Ser Tyr Met Gly  
140 130 135 140  
143 Glu Phe Ala Val Val Tyr Thr Asp Gly Cys Cys Ser Gly Asn Gly Arg  
144 145 150 155 160  
147 Asn Arg Ala Arg Ala Gly Ile Gly Val Tyr Trp Gly Pro Gly His Pro  
148 165 170 175  
151 Leu Asn Ile Ser Glu Arg Leu Pro Gly Arg Gln Thr Asn Gln Arg Ala  
152 180 185 190  
155 Glu Ile His Ala Ala Cys Lys Ala Ile Glu Gln Ala Lys Ser Gln Asn  
156 195 200 205  
159 Ile Lys Lys Leu Ile Ile Tyr Thr Asp Ser Lys Phe Thr Ile Asn Gly  
160 210 215 220  
163 Ile Thr Ser Trp Val Glu Asn Trp Lys Thr Asn Gly Trp Arg Thr Ser  
164 225 230 235 240  
167 Ser Gly Gly Ser Val Ile Asn Lys Glu Asp Phe Gln Lys Leu Asp Ser  
168 245 250 255  
171 Leu Ser Lys Gly Ile Glu Ile Gln Trp Met His Ile Pro Gly His Ala  
172 260 265 270  
175 Gly Phe Gln Gly Asn Glu Glu Ala Asp Arg Leu Ala Arg Glu Gly Ala

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/616,009

DATE: 09/02/2005

TIME: 14:08:22

Input Set : D:\ISIS-5138.ST25.txt  
 Output Set: N:\CRF4\09022005\J616009.raw

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185	<212> TYPE: PRT		
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191	1 5 10 15		
194	Gly Ile Tyr Asn Thr Trp Asn Glu Cys Lys Asn Gln Val Asp Gly Tyr		
195	20 25 30		
198	Gly Gly Ala Ile Tyr Lys Lys Phe Asn Ser Tyr Glu Gln Ala Lys Ser		
199	35 40 45		
202	Phe Leu Gly Gln Pro Asn Thr Thr Ser Asn Tyr Gly Ser Ser Thr His		
203	50 55 60		
206	Ala Gly Gly Gln Val Ser Lys Pro His Thr Thr Gln Lys Arg Val His		
207	65 70 75 80		
210	Arg Arg Asn Arg Pro Leu His Tyr Ser Ser Leu Thr Ser Ser Ala		
211	85 90 95		
214	Cys Ser Ser Leu Ser Ser Ala Asn Thr Asn Thr Phe Tyr Ser Val Lys		
215	100 105 110		
218	Ser Asn Val Pro Asn Ile Glu Ser Lys Ile Phe Asn Asn Trp Lys Asp		
219	115 120 125		
222	Cys Gln Ala Tyr Val Lys His Lys Arg Gly Ile Thr Phe Lys Lys Phe		
223	130 135 140		
226	Glu Asp Gln Leu Ala Ala Glu Asn Phe Ile Ser Gly Met Ser Ala His		
227	145 150 155 160		
230	Asp Tyr Lys Leu Met Asn Ile Ser Lys Glu Ser Phe Glu Ser Lys Tyr		
231	165 170 175		
234	Lys Leu Ser Ser Asn Thr Met Tyr Asn Lys Ser Met Asn Val Tyr Cys		
235	180 185 190		
238	Asp Gly Ser Ser Phe Gly Asn Gly Thr Ser Ser Ser Arg Ala Gly Tyr		
239	195 200 205		
242	Gly Ala Tyr Phe Glu Gly Ala Pro Glu Glu Asn Ile Ser Glu Pro Leu		
243	210 215 220		
246	Leu Ser Gly Ala Gln Thr Asn Asn Arg Ala Glu Ile Glu Ala Val Ser		
247	225 230 235 240		
250	Glu Ala Leu Lys Lys Ile Trp Glu Lys Leu Thr Asn Glu Lys Glu Lys		
251	245 250 255		
254	Val Asn Tyr Gln Ile Lys Thr Asp Ser Glu Tyr Val Thr Lys Leu Leu		
255	260 265 270		
258	Asn Asp Arg Tyr Met Thr Tyr Asp Asn Lys Lys Leu Glu Gly Leu Pro		
259	275 280 285		
262	Asn Ser Asp Leu Ile Val Pro Leu Val Gln Arg Phe Val Lys Val Lys		
263	290 295 300		
266	Lys Tyr Tyr Glu Leu Asn Lys Glu Cys Phe Lys Asn Asn Gly Lys Phe		
267	305 310 315 320		
270	Gln Ile Glu Trp Val Lys Gly His Asp Gly Asp Pro Gly Asn Glu Met		

## RAW SEQUENCE LISTING

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TIME: 14:08:22

Input Set : D:\ISIS-5138.ST25.txt  
 Output Set: N:\CRF4\09022005\J616009.raw

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 274 Ala Asp Phe Leu Ala Lys Lys Gly Ala Ser Arg Arg  
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 279 <211> LENGTH: 155  
 280 <212> TYPE: PRT  
 281 <213> ORGANISM: E.coli  
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 289 Pro Gly Pro Gly Gly Tyr Gly Ala Ile Leu Arg Tyr Arg Gly Arg Glu  
 290 20 25 30  
 293 Lys Thr Phe Ser Ala Gly Tyr Thr Arg Thr Asn Asn Arg Met Glu  
 294 35 40 45  
 297 Leu Met Ala Ala Ile Val Ala Leu Glu Ala Leu Lys Glu His Cys Glu  
 298 50 55 60  
 301 Val Ile Leu Ser Thr Asp Ser Gln Tyr Val Arg Gln Gly Ile Thr Gln  
 302 65 70 75 80  
 305 Trp Ile His Asn Trp Lys Lys Arg Gly Trp Lys Thr Ala Asp Lys Lys  
 306 85 90 95  
 309 Pro Val Lys Asn Val Asp Leu Trp Gln Arg Leu Asp Ala Ala Leu Gly  
 310 100 105 110  
 313 Gln His Gln Ile Lys Trp Glu Trp Val Lys Gly His Ala Gly His Pro  
 314 115 120 125  
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 322 145 150 155  
 325 <210> SEQ ID NO: 5  
 326 <211> LENGTH: 216  
 327 <212> TYPE: PRT  
 328 <213> ORGANISM: Mouse EST  
 330 <400> SEQUENCE: 5  
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 333 1 5 10 15  
 336 Pro Gly Val Phe Leu Ser Trp Ser Glu Cys Lys Ala Gln Val Asp Arg  
 337 20 25 30  
 340 Phe Pro Ala Ala Arg Phe Lys Lys Phe Ala Thr Glu Asp Glu Ala Trp  
 341 35 40 45  
 344 Ala Phe Val Arg Ser Ser Ser Pro Asp Gly Ser Lys Gly Gln Glu  
 345 50 55 60  
 348 Ser Ala His Glu Gln Lys Ser Gln Ala Lys Thr Ser Lys Arg Pro Arg  
 349 65 70 75 80  
 352 Glu Pro Leu Val Val Val Tyr Thr Asp Gly Cys Cys Ser Ser Asn Gly  
 353 85 90 95  
 356 Arg Lys Arg Ala Arg Ala Gly Ile Gly Val Tyr Trp Gly Pro Gly His  
 357 100 105 110  
 360 Pro Leu Asn Val Arg Ile Arg Leu Pro Gly Arg Gln Thr Asn Gln Arg  
 361 115 120 125

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/616,009

DATE: 09/02/2005  
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Input Set : D:\ISIS-5138.ST25.txt  
Output Set: N:\CRF4\09022005\J616009.raw

364 Ala Glu Ile His Ala Ala Cys Lys Ala Val Met Gln Ala Lys Ala Gln  
365 130 135 140  
368 Asn Ile Ser Lys Leu Val Leu Tyr Thr Asp Ser Met Phe Thr Ile Asn  
369 145 150 155 160  
372 Gly Ile Thr Asn Trp Val Gln Gly Trp Lys Lys Asn Gly Trp Arg Thr  
373 165 170 175  
376 Ser Thr Gly Lys Asp Val Ile Asn Lys Glu Asp Phe Met Glu Leu Asp  
377 180 185 190  
380 Glu Leu Thr Gln Gly Met Asp Ile Gln Trp Met His Ile Pro Gly His  
381 195 200 205  
384 Ser Gly Phe Val Gly Asn Glu Glu  
385 210 215  
388 <210> SEQ ID NO: 6  
389 <211> LENGTH: 26  
390 <212> TYPE: DNA  
391 <213> ORGANISM: DNA *invalid response - see item 10 on Error summary sheet*  
393 <400> SEQUENCE: 6  
394 acgctggccg ggagtcgaaa tgcttc 26  
397 <210> SEQ ID NO: 7  
398 <211> LENGTH: 28  
399 <212> TYPE: DNA  
400 <213> ORGANISM: DNA *same error*  
402 <400> SEQUENCE: 7  
403 ctgttcctgg cccacagagt cgccttgg 28  
406 <210> SEQ ID NO: 8  
407 <211> LENGTH: 29  
408 <212> TYPE: DNA  
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411 <400> SEQUENCE: 8  
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420 <400> SEQUENCE: 9  
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427 <213> ORGANISM: DNA  
429 <400> SEQUENCE: 10  
430 ttgattttca tgcccttctg aaacttccg 29  
433 <210> SEQ ID NO: 11  
434 <211> LENGTH: 34  
435 <212> TYPE: DNA  
436 <213> ORGANISM: DNA  
438 <400> SEQUENCE: 11  
439 cctcatcctc tatggcaaac ttcttaatc tggc  
442 <210> SEQ ID NO: 12

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*Please correct this error in subsequent sequences.*

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10/616,009

DATE: 09/02/2005

TIME: 14:08:23

Input Set : D:\ISIS-5138.ST25.txt

Output Set: N:\CRF4\09022005\J616009.raw